

Space News Roundup

Vol. 28

April 14, 1989

No. 15

JSC officials elated about Truly choice

Top JSC officials voiced elation Wednesday at the news one of their former JSC colleagues will soon be steering a course for the agency, but said they are not expecting any favoritism.

"This is the kind of news that bodes well for NASA," said JSC Director Aaron Cohen. "Admiral Truly has proven capability that will allow him to do a great job. He has the best interests of the space program, the agency and its employees at heart, and I know he will be a strong administrator. He has the experience, the technical background and the credibility and respect in Washington that such a tough job demands."

Cohen said he worked closely with Truly during the return to flight effort, and that experience built a sense of mutual trust and respect between them. That relationship should help ensure good communication between top JSC and Headquarters managers, he said.

"After these past few grueling years, I feel I know Dick Truly well, and I look forward to working under his leadership," Cohen said.

"I think it's outstanding," said Astronaut Office Chief Dan Brandenstein, who made his first space flight with Truly aboard *Challenger* in 1983. "He was an outstanding commander on STS-8 and has done a tremendous job at Code M during the recovery period and return to flight, and I think he'll be an outstanding administrator."

Please see **REACTION**, Page 4



JSC Photo by Jack Jacob

SHARE RETURN—Crew and Thermal Systems engineers, from right, Gene Ungar and John Cornwell, look on as the Space Station Heat Pipe Advanced Radiator Element (SHARE) is wrapped Tuesday shortly after arrival back at JSC. SHARE, which recently returned from a trip to space on STS-29, was later hoisted vertical for an ultrasonic test, the first of a long series of post-flight tests destined to improve the proposed space station radiator's design.

Bush picks Truly to lead NASA

President Bush announced Wednesday his intention to nominate Rear Adm. Richard H. Truly to become the next NASA administrator.

Truly, a former astronaut at JSC, has been NASA associate administrator for space flight since February 1986. He led the recovery team following the *Challenger* accident in January of that year and headed the return to flight effort that culminated in *Discovery's* September 1988 launch.

"This marks the first time in its distinguished history that NASA will be led by a hero of its own making," Bush said, "an astronaut who had been to space, a man who has uniquely experienced NASA's tremendous teamwork and achievement."

Bush also announced Wednesday that he intends to nominate J.R. Thompson, director of the Marshall Space Flight Center in Huntsville, Ala., since 1986, to become NASA deputy administrator succeeding Dale D. Myers.

A member of the astronaut class of 1969, Truly made his first space flight in November 1981 as the pilot of STS-2, and he was the commander



Rear Adm. Richard H. Truly

of STS-8, the first night launch of a Shuttle. He was pilot on one of the two Space Shuttle Enterprise approach and landing test flights in 1977.

Truly left the astronaut corps in 1983 to become the first commander of the Naval Space Command, and

Please see **TRULY**, Page 4

Williams becomes acting integration manager

Nicholson new Shuttle program deputy

By Kyle Herring

Leonard S. Nicholson, former manager of the National Space Transportation System Integration and Operations Office, has been appointed deputy manager of the NSTS Program at JSC.

Lawrence G. Williams, deputy director of NSTS Integration and Operations, will serve as acting manager of that office.

Nicholson succeeds Jay F.

Honeycutt, who moved to Kennedy Space Center, last month to direct the processing of NASA's Space Shuttle Orbiters as director of STS Management and Operations.

Nicholson joined NASA in 1963 in the Engineering and Development Directorate at JSC and held several engineering positions in the Advanced Missions Program Office, the Apollo Spacecraft Program Office and the STS Operations Office.

He then served as technical assistant to the center director until becoming manager of the NSTS Mission Integration Office in April 1982. In this capacity, Nicholson was responsible for the overall management of the flight manifest and requirements, and integration and payload integration. In 1985 he became manager of the Integration and Operations Office, continuing his responsibilities for directing the operations and payload

integration activities of the NSTS Program Office.

Williams began his career at JSC in 1962, working on the Apollo and Skylab programs, and the Apollo-Soyuz Test Project. He served as the deputy manager of the NSTS Engineering Integration Office during the Shuttle recovery activity and most recently served as deputy manager of the NSTS Integration and Operations Office.



Leonard S. Nicholson

JSC-developed fabric hits the roof

Space suit material earns space technology fame

By Kari Fluegel

Space technology covering the Detroit Lion's Silverdome and a Saudia Arabian airport has made its way to the Cooperstown of space spinoffs.

A fabric developed by NASA at JSC for use as Apollo astronauts' space suits and later transferred to the private sector as a lightweight roofing material has been placed into the Space Technology Hall of Fame in the U.S. Space Foundation Building in Colorado Springs.

Recognition of the fabric, developed by Dr. Frederic Dawn, special assistant in the Crew and Thermal Systems Division, is the second JSC spinoff placed in the Hall of Fame in its first two years of existence. In 1988, the Firefighters' Breathing Apparatus, a system developed from astronaut breathing equipment advances, was inducted.

"Our nation's investment in space is continually paying benefits to all of us," said Dean Glenn, technology utilization officer. "Not only do space program spinoffs make our lives easier and more useful, but our whole economy benefits as new products, new businesses and new jobs are constantly being derived."

Award recipients are selected by a committee of leaders in Congress and pioneers in the commercialization of space.

"Recognition of JSC personnel by these groups and individuals is high praise, indeed," Glenn said.

During the Apollo era, NASA needed a fabric that was durable, yet thin, light and flexible for astronauts' space suits. Most importantly the fiber had to be non-flammable in an oxygen-rich environment. Dawn, who had been developing such a fiber since before he joined NASA in 1962, met the need.

Under NASA contract, Owens-Corning Fiberglas Corp. in Toledo, Ohio, wove the ultrafine glass fiber called Beta yarn into a fabric and coated it with Teflon TFE manufactured by the Du Pont Company in Wilmington, Del., tailoring it for astronaut use.

Beta yarn is now used extensively in the Shuttle Orbiters and on many satellites, Dawn said.

"I felt a spinoff would have tremendous benefits for commercial applications," he said. "I think the Technology Utilization Office did a very good job on this."

To adapt the fabric for construction, Owens-Corning thickened the yarn, Chemical Fabrics Inc. of Bennington, Vt., wove it into stronger and more porous fabric and applied a heavier coating of Teflon TFE.

Please see **FABRIC**, Page 4



JSC Photo

JSC's Dr. Frederic Dawn poses with the Apollo space suit that utilized his award-winning fabric.

JSC

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays:

General Cinema (valid for one year): \$3.50 each.

AMC Theater (valid until May 31): \$2.95 each.

Sea-Arama Marineworld (Galveston, valid until Aug. 17, 1990): adults, \$8.75; children \$5.50.

Astroworld (1989 season pass): \$32.36.

Ballroom dance (April 17, 7 p.m., Rec Center): \$11 per person.

San Antonio Trip (April 21-23 includes transportation, two nights at Emily Morgan Hotel, two parades, Sunday brunch): \$123.

"Pericles, Prince of Tyre" (April 22-28, 8 p.m., Satellite Theatre, UHCL): \$4.

"Blithe Spirit" (April 21, 22, 28 and May 5, 6, 12, 8:15 p.m., Clear Creek Country Theatre): \$5.

FEB-FBA Employee of the Year Luncheon (May 4, 11:30 a.m., Holiday Inn Crowne Plaza): \$15.

Ramses Egyptian Art Exhibit (May 20-21, Dallas, includes transportation, overnight accommodations, lunch, breakfast, admission): \$90.

JSC

Today

Anything goes—Teams are being sought to participate in the "Anything Goes" competition at the 1989 JSC Employee Picnic May 6. Six teams of six people each (three men, three women) are needed. Sign-up at the Rec Center by May 1. Cost is \$10 per team; each team member receives a T-shirt. For information, call x35789.

AFCEA luncheon—John Aaron, manager of the Space Station Projects Office, is the featured speaker at the AFCEA's monthly luncheon April 14 at the Nassau Bay Hilton. A social will begin at 11:30 a.m.; lunch will be at noon; and Aaron will speak at 12:30 p.m.

Cafeteria menu—Special: fried chicken. Entrees: fried shrimp, baked fish, beef stroganoff. Soup: seafood gumbo. Vegetables: okra and tomatoes, buttered broccoli, carrots in cream sauce.

Monday

Cafeteria menu—Special: meat sauce and spaghetti. Entrees: franks and sauerkraut, sweet and sour pork chop with fried rice, potato baked chicken. Soup: cream of potato. Vegetables: French beans, buttered squash, lima beans.

Tuesday

Internal control conference—JSC

will host the second annual NASA Internal Controls Conference April 18-20 at the Gilruth Recreation Center. The conference will cover the internal control program process, corrective action requirements and audit follow-up. Sessions will be 8 a.m. to 5 p.m. each day. For reservations, call Grace Thornton, x32970.

Cafeteria menu—Special: smothered steak with dressing. Entrees: beef stew, liver and onions, shrimp creole. Soup: navy bean. Vegetables: buttered corn, rice, cabbage, peas.

Wednesday

Secretary search—The Human Resources Office is accepting applications for GS-4 and 5 secretaries. Any secretary who is a permanent federal employee or a former federal employee with reinstatement eligibility is encouraged to apply. For more information, call x32135.

Cafeteria menu—Special: salmon croquette. Entrees: roast beef, baked perch, chicken pan pie. Soup: seafood gumbo. Vegetables: mustard greens, Italian green beans, sliced beets.

Thursday

NCMA meeting—Fred P. Zimmer, contracts and pricing vice president of Rockwell International, will be the featured speaker at the Space City

Houston NCMA Chapter's monthly luncheon meeting April 20 in the Rec Center. For more information, call Liz Aldridge, x38518.

Technology transfer seminar—NASA-JSC and the AIAA Houston section will present a "Seminar on Exchange of Technical Information Between Nations" from 8:15 a.m. to 5 p.m. April 20 in the Teague Auditorium. The seminar will focus on outlining restricted and unrestricted technology. For more information, call Andre Sylvester, x31537.

Cafeteria menu—Special: stuffed cabbage. Entrees: beef tacos, ham and lima beans. Soup: beef and barley. Vegetables: ranch beans, brussels sprouts, cream style corn.

April 21

Houston Space Society—The Houston Space Society's April meeting will begin at 7:30 p.m. in the Atlantic Room of the University of Houston's Student Center. The featured speaker is Peter Lange, whose presentation will cover the concepts presented in the book "The Overview Effect - Space Evolution and Human Evolution" by Frank White. For more information, contact Peter Lange at x30850.

Cafeteria menu—Special: Salisbury steak. Entrees: fried shrimp, deviled

crabs, ham steak. Soup: seafood gumbo. Vegetables: buttered carrots, green beans, June peas.

April 25

BAPCO meets—The Bay Area PC Organization (BAPCO) will meet at 7:30 p.m. April 25 at the League City Bank & Trust. For more information, call Earl Rubenstein, x34807, or Ron Waldbillig, 337-5074.

BFEC meets—The Boeing Flight Equipment Contract (BFEC) Management Club will meet at 5:15 p.m. April 25 in the Rec Center. Glynn Lunney will speak. For more information, call Vicki Mittendorf, 282-6652, or Bill Foster, 282-4049.

April 27

Space flight symposium—The Texas Bay Area Chapter of the Society of Hispanic Professional Engineers (SHPE) will co-sponsor "The Challenge of Space Flight: A Space Symposium" to be held April 27-28 at JSC. The joint effort will be aimed at disseminating information to minority groups, educators, technical professionals and managers of EEO programs concerning current and future manned space activities and skills needed by JSC to meet the manpower needs of the 21st century. For more information, call Otilia Sanchez, x39319.

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2.

Property

Rent: Dickinson, stalls w/pasture, trails, 1 mile off I-45. 534-2806 or 333-7098.

Sale: Alvin area, brown brick, 3-1-1, 25 min. from NASA, cul-de-sac, estab. neighborhood, near schools. Kay, x32251 or 331-3379.

Rent: Bacliff, mobile home lot, \$85/mo., \$50/dep., 4421 4th St., and 4102 Kinne. 488-1758.

Sale: Meadowgreen, 3-2-5-2, vaulted ceilings, island kitchen, block paneled study, 4 yrs. old, ex. cond., 10.5% assum., \$102,000. 480-6185.

Sale/Rent: Lakeside condo, 2-1, 25' boat slip (motor or sail), tennis, lakeside pool/party pavilion, sauna and exercise facilities, \$39,000 or \$500/mo., util. incl. Carol, x39647 or 667-7023.

Sale: Friendswood/Forest Bend, 3-2-2, den, screened porch, ceiling fans, new paint inside and out, 9.5% assum. \$514/mo. Nick, x31920 or 996-7917.

Sale: Toledo Bend, 7 lots (2 waterfront), all heavily wooded. 334-1909.

Sale: University Green patio home, 2-2-2D, study, 5 bks. from JSC west gate, extensive amenities, low maint., mid-90's. 488-0397.

Sale: Heritage Park, 3-2-2 brick home, 1560 sq. ft., custom kitchen and bath, tile floors, new carpet in LR., atrium, mini blinds, lg. backyard, \$58,000. Tony or Lori, 482-5139.

Rent: Lake Livingston, waterfront, 3-2, new cond., fully furnished, covered decks, pier, wood FPL., ex. fishing, week or weekend. 482-1582.

Sale: Seabrook, 3rd and Hall, 50' x 125' corner wooded lot, \$13,500, OBO., owner finance. x38373.

Sale: League City, 2.06 acres, city water and sewer avail., near schools, 10 min. from NASA, \$39,950. 554-6695.

Lease: South Bend, 3-2-5-2, FPL, fence, clean, gas util., good location, new paint, \$550/mo. 482-6609.

Sale: College Station, 3-1, 3 bks. from A&M campus, \$500 dn., assume fixed FHA 9.5%, \$398/mo. 326-1278.

Sale: Pebblebrook, 1BR condo, new A/C unit, new dishwasher, new carpet, W/D, ceiling fan. Aggie 280-1989 or (409) 925-8593.

Rent: Cancun, MX., 2-BR villa, 5-star resort, sleeps 6, satellite TV, fully equipped kitchen, maid serv., and rec. amenities incl. \$135/night. 729-0654.

Sale: 1982 Fleetwood Festival mobile home, 2-2, 14' x 72', CA/H, appli., ex. cond., \$9,000, OBO. 474-4306 or (409) 925-5554.

Sale: Big Bend area hunting land, 160 acres, \$150/acre, CFD 20% dn. 9% for 5 yrs. 337-4051.

Sale: Seabrook, 2-1 small cottage on 3.29 acres, 5 mi. from NASA, hardwood floors, FPL, secluded, \$97,500. 532-4784.

Sale: Galveston Bay waterfront home, 3-3-6, deck, spa, and extras, view w/infinite horizon. 334-1909.

Sale: Heritage Park, 4-2-2, clean, walk-ins, separate master suites, patio covered, fenced, stove, refrig., assum. VA loan. 334-1909.

Rent: Galveston beach home, 2BR, front row, adjacent to San Luis Pass fishing pier, weekends/weekly. 894-0979.

Sale: Taylor Lake Estates, 90' x 135' lot

in exclusive lakefront subdivision, \$36,500. Don, x38039 or 333-3313

Cars & Trucks

'72 Buick Skylark, GT equip., 350-4bbl., high performance, completely restored, low mi., all fac. equip., one of a kind, must sell, \$3,495.00. (409) 945-6894.

'84 Nissan Sentra 2 dr., 5 spd., clean, good cond., red ext., gray int., Alpine AM/FM/cass., A/C, \$3,000. 480-9198.

'85 Jeep CJ-7 Renegade, 4WD, 6 cyl., 5 spd., h/top, tilt, A/C, \$6,950, OBO. Keith x33478 or 480-0950.

'78 Honda Civic, slight problem, \$250. 481-8608.

'79 Toyota Corolla, auto, A/C, AM/FM/cass., cruise, P/B well-maintained, \$1,200. 332-3537.

'73 Corvette, T-tops, L48, auto., deluxe int. all orig., new Eagle GT's, stainless steel exh. sys., F/R suspension bushings, ball joints, rear spring, white/saddle, \$9,000, OBO. 488-8927.

'88 Mazda 323 SE, 5 spd., A/C, AM/FM/cass., 24K mi., \$6,800 or take up payments. Jay, 335-7134 or 481-2335.

'78 Buick Regal, V-8, 350 eng., 2 dr., blue, P/S, P/B, needs T-top, good cond., \$500. Brenda, 480-8190 or 486-7344.

'76 Datsun 280Z, auto., A/C AM/FM, good tires, runs great. Ed, x30798 or 474-5074.

'64 Corvair, parting out. 333-3990.

'82 Mercedes, 500 SEL, sunroof, Euro. w/papers, 101K mi., navy blue velour, \$18,000. x34341 or 534-4501.

'88 Toyota Camry, 10K mi., blue, sunroof, auto., loaded, 6 yr/60K mi. ext. warr. 280-1500 ext. 3330 or 554-7496.

'85 Pontiac Fiero, fully equipped, bright red, one owner, new tires, very clean. 480-0829

'87 Toyota FX16, very clean, new tires, \$7,500. Chris, 282-2667 or (409) 925-8593.

'82 El Camino P/U, V-6, auto., runs good, looks good, \$2,500. John, 282-3216 or 996-9147.

'74 Cadillac Coupe De Ville, A/C, P/S, P/W, P/seats, cruise, good mech. cond., body needs work, \$500, OBO. Nicolas, 282-3307 or 486-4016.

'84 Chevy van, P/B, P/S, A/C, AM/FM, new tires, auto., new paint, low mi., \$5,000. 482-6609.

'84 Audi 5000S, ex. cond., low mi., white w/dark brown leather int., moonroof, like new, \$7,000, OBO. x37848 or 520-5715.

'80 Chev. Blazer, 4 spd., 4WD, A/C, mags, Pioneer AM/FM/cass., low mi., \$3,700. 332-0365.

'85 Dodge Omni GLH Turbo, full roll cage, spare roller, 8 wheels, fun fast, less than 1K mi., on rebuild, \$3,000, spares nega. x32949.

Cycles

'85 Honda ATC 250 SX, shaft drive, elec. start, reverse, 2 sets of tires, ex. cond., \$1,100. 282-4261 or 554-4974.

Honda CR125 dirt bike, good cond., \$195. 474-2200.

'79 Yamaha XS 750 Special, 1 owner, Windjammer, AM/FM/cass., new tires, lots of extras, \$1,100, OBO. Rich, x34818 or 480-8335.

Two Honda Passports, both running, \$250 and \$350; '83 Honda Aero 80 cc scooter, very good cond. \$450. 333-7138 or 554-2476.

Boats & Planes

16 1/2' bass boat, Ranger Trio, 85hp Johnson motor, Moody trailer, trolling motor, depth gauge, 3 seats, 2 gas tanks, 2 anchors, lg. storage locker, \$2,000, OBO. 484-4899.

'88 Bayliner 2455 Ciera Sunbridge, OMC 230 I/O, CB, depthfinder, shore power, full instrumentation, curtains, AC/DC refrig.,

elec./alcohol stove, twin batteries/auto. charger, trim tabs, enclosed head, fenders, anchor, etc., \$24,500. Jim x39872 or 333-4228.

Windsurfer, Mistral Bermuda, complete rig, ex. cond. 488-6526.

Audiovisual & Computers

Zenith computer, 100% IBM compatible, 640K memory, 2-360 floppy drives, graphics capability, internal modem, software, manuals, \$850, OBO. Daryle, 282-4863 or 532-1977.

Eagle PC-2 personal computer and keyboard (monitor not incl.), incl. MS-DOS 1.25, GW basic, PFS File, PFS Write, and PFS Report, \$200. 488-0712.

Commodore 64 computer, diskdrive, printer, flight simulator software package, joystick, \$300. Mark, x36051 or 554-2440.

Apple IIE, dual disk drive, monitor, 300 Bd Hayes modem, Okidata 82A printer, assorted software, manuals, cables, 80 column card, \$1,200. Danny, x33605.

Klipsch Heresy II's, 1 yr. old, EC, \$750/pair. Bill, x38544.

Apple II+, 64K RAM, language card, NEC color monitor, 1 disk drive, joystick, programs and manuals, \$300, OBO. John, 991-3753.

Apple IIE Enhanced, A.E. Ramworks 80 column memory card, 384 K RAM, 2 disk drives, parallel printer port, 300 baud modem card, CP/M card, NEC monochrome monitor, system saver w/fan, programs, and manuals. \$800, OBO. John, 991-3753.

Household

19" RCA XL-100 color TV, \$100. x30075 or 481-0688.

Couch, sofa/bed, end tables, lamps, and remnants. x35453.

Antique Duncan Phyfe-upholstered couch and chair w/detailed mahogany carving, very good cond., \$550. Tom, 280-0828.

Microwave, 1.5 cu. ft., 700 watt, w/rem. shelf and glass drip pan, programmable w/several auto. functions, used for 9 mos., ex. cond. x32461 or 486-7058.

Dresser, 9 drawer w/mirror, beige w/brown flecks; 2 matching night stands, \$75. Lori, eves, 482-5139.

Desk, \$20; 2 bar stools, \$10; lawn chair, \$5; swivel chair, \$5; 2 end tables, \$20. Joyce, x30829 or 480-3535.

Couch, 7', gold, good cond., \$125. Michael, 282-5443 or 863-8710.

Queen size sensation water bed, w/tubes, looks like a regular mattress, 5 mo. old, \$400. David, 544-5514 or 282-3827.

Design registered Armoire \$600; set of tables, \$15; 2 chairs, TV table/cabinet, \$20; microwave stand \$45. 996-7750.

Crib w/matt., \$45; single bed w/matt, \$100; couch \$75; recliner \$50; vertical window blinds, asst. sizes. Lee x33499 or 333-2343.

Large desk, top 36" x 72", walnut formica finish, good work table, \$275. Karen, x34705 or 332-2416.

Glass table w/4 chairs, ex. cond. \$150. Kay, x32251 or 331-3379.

Sealy Postpedic, extra firm twin, good cond., w/frame, \$200, OBO. 480-9198.

Matching couch, love seat, and chair, beige, tan, and rust plaid, good cond. \$150. 482-2138.

New windows, doors, light fixtures, mouldings, cabinet and door hardware. Don, x38039 or 333-3313.

Wanted

Want Volvo 15" Turbo wheel (5 spokes) in good cond. Vincent, x30874 or 333-1316.

Want Starwars spaceships, toys, figures, and books. Ron, 482-1385.

Wanted 35 to 55hp Chrysler outboard motor for parts. Jerry, x39287.

Want to trade \$8,000 electronic organ for land, car, truck, or boat of equal value, OBO. 337-4051.

Need riders for West Loop Park and Ride vanpool to NASA. Richard, x37557.

Riders needed for vanpool from Sugar Land, Westwood Mall (corner of Fondren and S. Braeswood), to JSC area. Alice, x35234.

Need occasional ride from Waterford Harbor to NASA/JSC, will reciprocate. Lili, x30962.

Forming carpool from Pearland area to NASA, working hrs. 7:15 AM to 4 PM. Roger, 333-4743 or 489-8842.

Riders needed for year old operating carpool from Katy Fwy./Hwy. 6 Park and Ride to NASA, working hrs. 7:30 AM to 4 PM. Dinesh, 333-4743.

Photographic

Misc. photo equip., old Kodak and Argus 35 mm cameras, box cameras, lenses, filters, light meter, flash units, etc., BO. Ray, x33954.

Pets & Livestock

Free reg. black Labrador, family pet, 7 yrs. old. Lili, x30962 or 334-2975.

Free kittens, American short-hair breed, solid white and black w/white, Tom, 282-5183 or 532-2087.

Free, half-Cocker/half-Dachshund (Cockle-Dockle), male, 5 yrs. old. Judy, x38455.

1 1/2-yr.-old long-haired cat, female, spayed, declawed front paws, all shots, good natured, free. x31400 or 480-1378.

Cocker Spaniel puppy, all papers and shots, blond, \$200 or trade for boat, outboard, or motorcycle, etc. Bob, 333-7138 or 554-2476.

Free dogs, rescued from abandonment and nursed back to health, many to choose from. x32949.

Musical Instruments

Kimball Spinnet Piano, 15 yrs. old, ex. cond. \$900, OBO. Rich, x34818 or 480-8335.

Kawai electronic organ, dual keyboard, rollout cover, solid oak, ex. cond., \$1,800. 332-9585.

Lost & Found

Lost: Space Shuttle data, "Goody" book, black binder, 5" x 8", mission operations decal on cover, reward. Rob, x35483 or 480-2997.

Miscellaneous

White French Provincial full size canopy bed, matching chest and dresser, \$300; never worn white cathedral length wedding gown and matching veil, size 10, \$225. 488-5079.

Crossbow w/roll-away target, \$50; graphite fishing rod w/Daiwa Millionaire reel, \$20. 474-7313.

Diamond wedding ring set, 0.88 karat Marquis solitaire engagement ring w/wedding band, yellow gold, \$1,900, appraised for \$6,500. Debbie, x31002 or 280-8428.

Sony Walkman, \$18; Deluxe Scrabble game, \$5; briefcase, \$10; leather carryall, \$25; Andrea raccoon figurine, \$25. Linda, x34044 or 280-0909.

HP-28C calculator, ex. cond., w/3 manuals and orig. packaging, \$75. John, 486-2035.

Craftsman II riding lawnmower, eight speeds, 11 hp, used two seasons, \$725; Emerson 8000 BTU air conditioner, 110 volts, \$170. 482-8827.

Assorted science fiction memorabilia. John, x38838 or 480-1920.

75-gallon aquarium w/stand., set up w/saltwater, many extras incl. fish, \$425. Mark, x36051 or 554-2440.

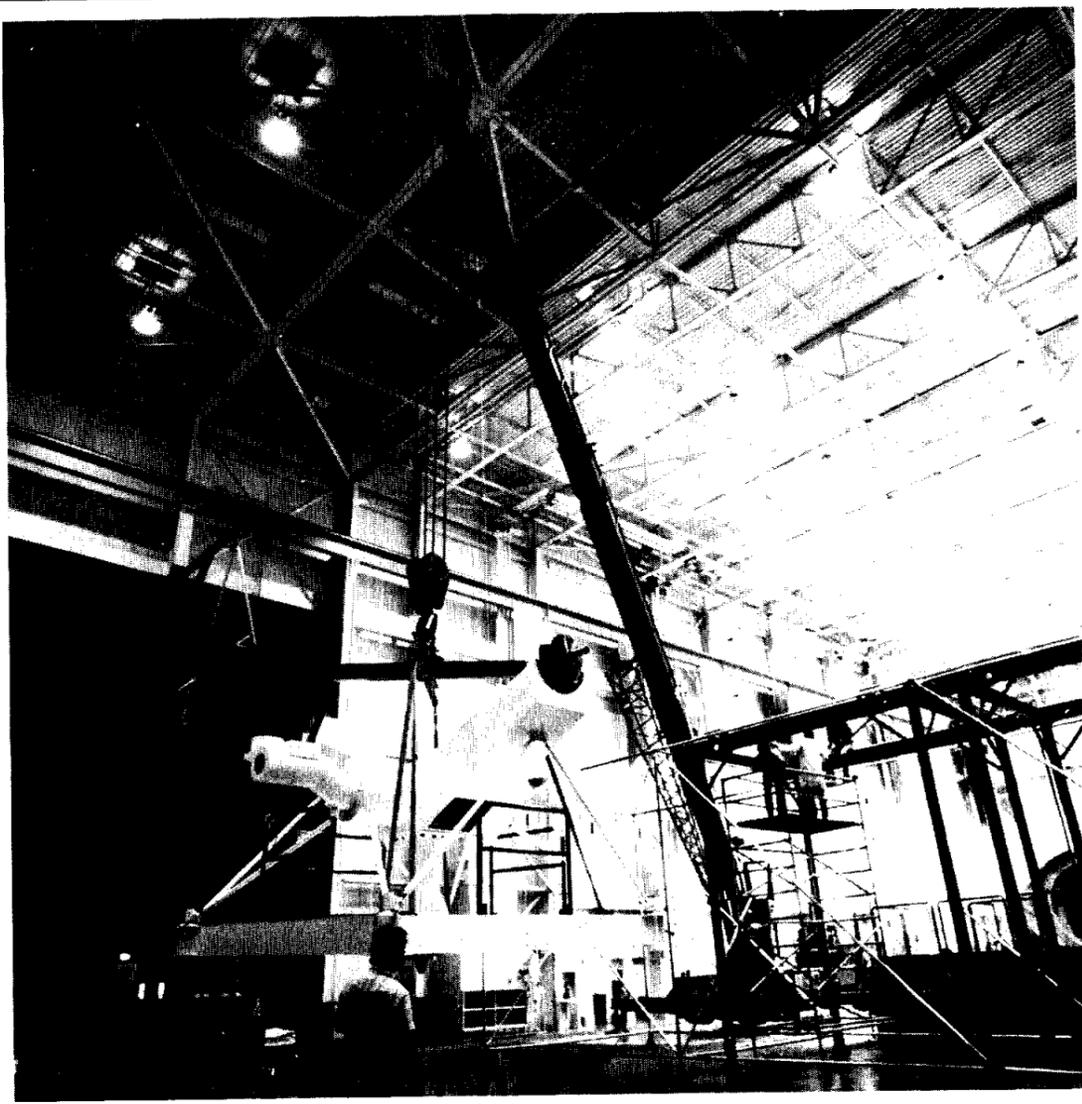
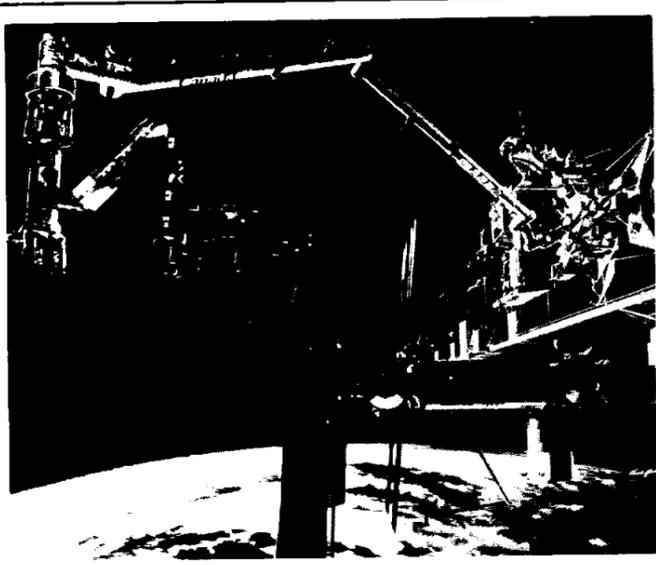
Wedding ring set, white gold, Marquis cut, 37-point engagement ring w/matching wedding band, \$950. Earl Rubenstein, x34807 or 326-2354.

Ram golf clubs, full set, bag, pull cart, access., sz. 11 shoes, \$150. John, 282-3216

or 996-9147.

Oval sunburst window treatment for front door, \$100; Honda Passport 70cc, helmet, \$400. 488-5079.

REACH ENVELOPE



Mobile Service System mock-up will teach movement while standing still

By Linda Copley

A full-sized static mock-up of the space station's Mobile Service System (MSS), perched 17 feet off the floor atop the narrow trusswork tubing in Bldg. 9B, is nearing completion this month.

The aluminum and steel mock-up, called the Mobile Remote Manipulator Development Facility (MRMDF), is a replica of the Mobile Servicing Centre (MSC), including the base structure (MBS), the remote manipulator arm it supports, JSC's Mobile Transporter (MT), and several bays of the space station's 540-foot-long truss.

Technical management of the MRMDF was by Johnson Engineering locally, while the Essex Corp. of Huntsville, Ala., was responsible for the design and fabrication of the MBS, MT and truss.

A static mock-up of the 55-foot-long mechanical arm, built by the Progressive Metals Co. in Waller, Texas, arrived early this week and should be installed on top of the mobile transporter within two or three weeks.

"The basic aim is to support space station assembly, development and crew training," said John Smith, subsystem manager for space station mock-ups and trainers. "This one will give us some understanding of reach capability as far as the arm is concerned. We need to know where the arm will reach, how far it will reach and what will interfere with the reach envelope of the system."

The lessons learned using the MDMDF mock-up will be used in preparing for a future operational version or to make allowances for

system development on the truss, Smith said.

"By mid-May," Smith said, "we'll be using the arm mock-up to conduct reach studies and interface studies with the mock-ups of the space station habitation and laboratory modules."

Even with the training and operational experience of using the Space Shuttle's remote manipulator system (RMS), there are new things to learn about its counterpart on Space Station *Freedom*, Smith said.

The space station arm will be almost five feet longer than the Shuttle arm, and it will have one additional degree of freedom. The Shuttle RMS has two directions of movement at the shoulder, one at the elbow and three at the wrist. The space station arm will have a

third direction of movement at the shoulder, he explained.

"It lets you go in one more direction than the Shuttle arm does, lets you reach things you probably couldn't reach otherwise."

Scott Morgan, project engineer for Johnson Engineering, said that while the mock-up cannot be remotely manipulated, workers will be able to move it back and forth along its truss structure rails, and that the arm will be moveable by adjusting flanges at the various joints.

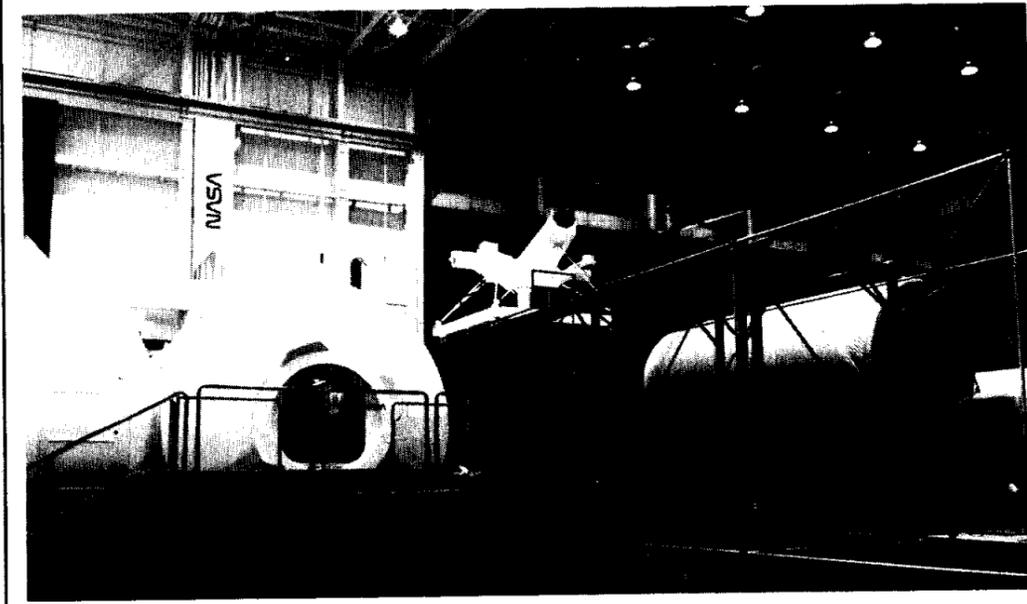
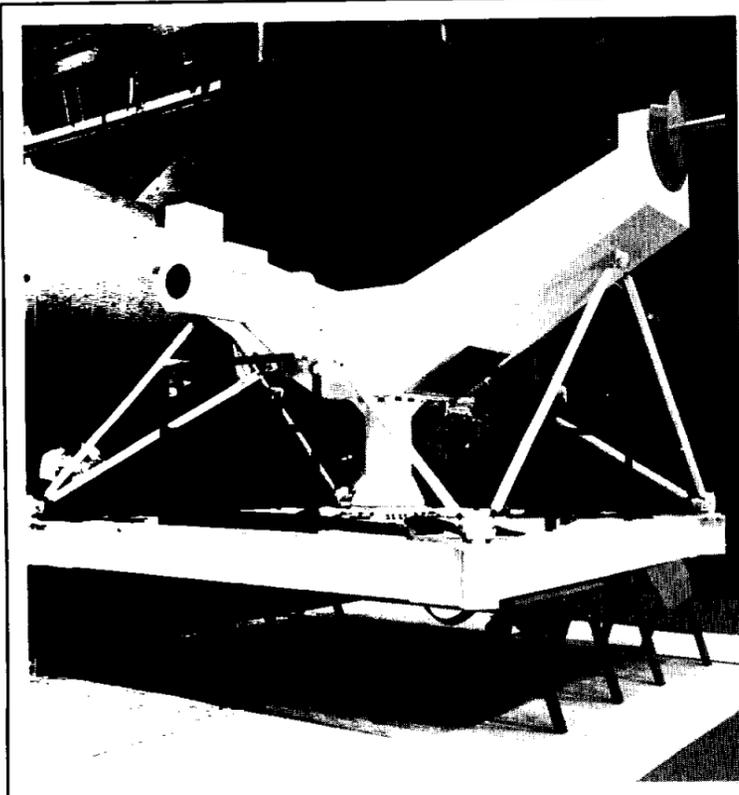
"It basically will be for envelope positioning, not actual articulating," Morgan said. It also will be used to provide views of the arm's positions from a future cupola mock-up.

Johnson Engineering discussed its preliminary concepts with

SPAR Ltd. of Canada before starting this effort. When completed, assembly of the entire mock-up will have taken about nine months. The whole project, from design to implementation will have taken about two years, Smith said.

The assembly of the MSC flight hardware will take place at McDonnell-Douglas' Huntington Beach facility, as part of Space Station Work Package 2.

"There are plans to have an even more advanced version of the MRMDF, with a manipulator arm that is operational from a control station in a node and cupola," Smith said. "By the end of 1992, we'll be using it like a trainer, the way we use the operational arm in the Manipulator Development Facility (MDF) in Building 9A today."



Clockwise from top right: 1) Local rigging contractors, supervised by Mockup and Trainer Section Chief Harmon Roberts and Johnson Engineering's Steve Elliot, raise the Mobile Remote Manipulator Development Facility onto the trusswork in Bldg. 9B; 2) the MDMDF sits atop the truss beside a space station resource node mock-up; 3) riggers prepare to hoist the mock-up; 4) and artist's concept of how the Mobile Servicing Centre will work with astronauts in orbit.

Kenny Rogers to touch down on "Planet Texas" May 2

By Linda Copley

Kenny Rogers, Dolly Parton and Willie Nelson will perform together for the first time, free-of-charge, for JSC's civil service employees and their families on site in Rocket Park the evening of Tuesday, May 2.

The concert will be taped for use in an upcoming NBC-TV Kenny Rogers special entitled "Something Inside So Strong," scheduled for broadcast nationally on May 20.

When Rogers, a native Houstonian, decided to produce a special based on "overcoming obstacles to greatness," he wanted it to take place in his hometown. He chose to perform for the employees of Johnson Space Center because of the motivation toward success, achievement and imagination that has always charac-

terized the space program for him.

"Coming to Johnson Space Center adds a whole new dimension to the presentation and debut of my new single," said Rogers. "I'm originally from Houston and it's something I've wanted to do for some time—and finally I will have the opportunity," said Rogers. "I will hopefully not only get to see the facility, but also meet some of the people who are responsible for this incredible new era in American history."

The performance is produced by Kenny Rogers Productions, which is covering all expenses to the center. JSC civil service employees and other U.S. Government employees working at the center will be invited to attend, and allowed to bring up to two family members to the concert, and must

accompany their guests at all times.

Only a limited number of tickets will be available because of the production company's crowd control and effects considerations. A total of three tickets per employee will be made available to employees next week through directorate and division organizations.

Local bands will begin entertaining at 7:30 p.m., prior to the actual concert, on a stage set up on the east side of Rocket Park. All entertainment should end by 10-10:30 p.m.

Attendees will begin being admitted to the viewing area at 6:30 p.m. Only vehicles bearing JSC parking decals will be admitted. The following gates will be open for entering and exiting the center for this event: Gate 1—Main entrance on NASA Road 1 by Building

100; Gate 2—NASA Road 1 entrance in front of Building 1; Gate 4—west entrance from Space Center Blvd.; and Gate 5—entrance from Saturn Lane. Parking areas will be designated at the time of the performance.

Seating will be on the ground, so concertgoers should plan to bring blankets or cushions. No lawn chairs will be allowed. Cameras are permitted, but no video cameras, tape recorders, coolers, glass containers, alcoholic beverages, or umbrellas will be allowed. There will be snacks and beverage concessions available, and food from home may also be brought.

In the event of rain, the performance will be rescheduled for Wednesday, May 3, 1989, at the same starting time.

Taped portions of the concert will be used in Rogers' new music video

"Planet Texas," which will also make its television debut on NBC during the May 20 program. The song is included in Rogers' newest album, "Something Inside So Strong," due for release in May. A movie, based on the song and starring Rogers, is in the development stages as well.

Executive Assistant Dan Nebrig, asked about allowing the concert to take place during the scheduled flight of STS-30, said, "This concert is an excellent opportunity to show our NASA family our appreciation, by allowing them to participate in a unique and enjoyable event right here at the center. We are making sure the setup and concert itself will not interfere in any way with mission activities going on at the time. We just hope everyone has a great time."



SET TO SEARCH—Astronaut Jim Bagian and JSC Librarian Donna McAllister take a look at the new literature search capabilities available in the JSC Technical Library in Bldg. 45. The library hosted an open house Wednesday to let JSC employees see for themselves how newly acquired electronic databases and catalogs can help them do their jobs.

Crew, launch teams begin final training for upcoming flight

By Kyle Herring

STS-30 crew members returned to JSC late last week to begin final training for the mission after making their last pre-launch visit to Kennedy Space Center.

The crew—Commander Dave Walker, Pilot Ron Grabe, and Mission Specialists Norman Thagard, Mary Cleave and Mark Lee—will not return

to the Cape until three days prior to launch. Final training will include vehicle and payload status briefings and simulations of the launch and deployment of Magellan, the Venus radar mapper.

The STS-30 flight readiness review (FRR) was scheduled to end today, with a final launch target date expected to follow. The launch of *Atlantis* continues to be projected for April 28.

Liftoff on that day could occur within a launch window that opens at 1:24 p.m. CDT and closes 18-minutes later at 1:42 p.m. The window grows each day until reaching its maximum of 121 minutes on May 13. The launch window is dictated by vehicle performance during launch and the need for daylight at landing sites across the Atlantic if a trans-Atlantic abort landing (TAL) is required.

At the launch site this week main engine technicians conducted leak checks of the engines on *Atlantis* to verify the integrity of the new high pressure oxidizer turbopumps.

The pumps were changed out with those processed in a way to prevent interior moisture buildup thought to

cause stress corrosion that could lead to small cracks.

Flight readiness tests of the main engines were scheduled to begin Wednesday. During this test hydraulic fluids are circulated, main engine valves are cycled, actuators tested and the Orbiter's moveable control surfaces are checked.

After the test is completed, instal-

lation of the main engine heat shields will begin in preparation for Monday's start of the helium signature leak checks

to verify the integrity of the overall main propulsion system.

Meanwhile in the payload bay of *Atlantis*, the batteries that power the flight computer aboard the inertial upper stage of the Magellan spacecraft are being installed today. The redundant inertial measurement unit—the guidance system aboard the IUS was changed out as scheduled and the work completed Tuesday morning. Preparations are underway to load the IUS computer batteries and software memory later this week.

All work that has been done to prepare the Space Shuttle and payload for flight was discussed at the launch readiness review this past week, as well as a look ahead at what work remains to be done prior to launch. While the launch readiness review includes KSC and liftoff only, the FRR includes the inflight portion of the mission and landing as well as contingency planning, tracking and data systems and Eastern test range support.

Fabric earns technology fame

(Continued from Page 1)

"NASA has done an outstanding job in space," Dawn said. "I think now we are getting the advantages of the space program."

The fabric roof of Pontiac Stadium, the first structure to use the material, emits light while protecting the playing field and 80,000 fans from the weather. The Teflon TFE-coated Beta Fiberglass material is virtually impervious to weather and sunlight. It will not stretch, shrink, mildew or rot; is strong, lightweight and flame-resistant; and does not require periodic cleaning because dirt does not stick to the surface of the Teflon TFE. The cost was about only 30-40 percent as much as conventional roofing.

The King Abdulaziz International Airport in Jeddah, Saudi Arabia, used the fabric on a colossal facility built to ease entry formalities for the massive influx of Moslems making pilgrimages to the holy city of Mecca. Each structure at the terminal has a multi-tented fabric roof spanning more than 50 acres. Together the structures contain 210 individual tent units and cover an area roughly equivalent to 80 football fields.

"The fabric domes were nominated for the first Hall of Fame award in 1988," Glenn said. "They are an outstanding example of how United States space technology can benefit mankind around the world and change the very shape and texture of our lives."

Truly gets Bush appointment to lead space agency

(Continued from Page 1)

served in that position until becoming NASA associate administrator.

"I am fully mindful that because Dick Truly is an active duty naval officer that I will need the assent and cooperation of the Congress to make this appointment," the president added. "I would like to say thanks in advance to the congressional leaders here today for their willingness to assist in moving this important nomination forward."

"Let me first just thank you for the faith you show in me to take over from a person of Jim Fletcher's caliber in running NASA," Truly told Bush in accepting the nomination.

"NASA is premier in aeronautics, space science and exploration and taking men and women to space to do important jobs for our country and I really look forward to—with your leadership—working with the vice president and the Space Council and contributing what I can," he said.

Truly succeeds Dr. James C.

Fletcher, who completed his second term as NASA administrator on Saturday after serving longer than anyone else in that job. Fletcher was administrator from April 1971 to May 1977 during the early development of the Space Shuttle, and was called back by President Reagan in May 1986 with a mandate to get the Shuttle flying again safely.

"I would be remiss indeed if I did not thank Dr. Fletcher once again for an outstanding job as NASA administrator," Bush said, "he has been an inspiration for all of us."

Truly, 51, was born in Fayette, Miss. He received a bachelor of aeronautical engineering at the Georgia Institute of Technology, and was commissioned as a Navy ensign in 1959. He became a naval aviator in 1960, flying F-8 Crusaders aboard the USS *Intrepid* and USS *Enterprise*, making more than 300 carrier landings.

From 1963 to 1965, he was a student and later an instructor at the

U.S. Air Force Aerospace Research Pilot School at Edwards Air Force Base, Calif. In 1965, he was one of the first military astronauts selected for the Air Force's Manned Orbiting Laboratory program. He transferred as an astronaut to NASA in 1969.

Truly has received numerous awards and commendations, including the Presidential Citizen's Medal, two NASA Distinguished Service Medals, the NASA Outstanding Leadership Medal, two NASA Exceptional Service Medals and two NASA Space Flight Medals and the Navy Distinguished Flying Cross.

Thompson, also a graduate of the Georgia Institute of Technology, as well as the University of Florida, has served in various capacities at Marshall. He was deputy director of technical operations at the Princeton Applied Physics Laboratory from 1983 to 1986. He was vice chairman of the NASA task force inquiring into the cause of the *Challenger* accident.

Reaction to Truly's nomination positive at JSC

(Continued from Page 1)

and return to flight, and I think he'll be an outstanding administrator."

Flight Crew Operations Director Don Puddy was Truly's assistant in Washington for a year starting in 1986, and worked with him as a flight director during the Space Shuttle Approach and Landing Test Program. Truly's close ties to JSC will not engender any special dispensations for flight crew operations, he predicted.

"He has such a sense of fair play that he won't be showing any favoritism," Puddy said. "At the same time, he knows flight crew operations and will be easy to interface with."

Puddy said Truly has done an excellent job of working with the mixed fleet concept of launch vehicles, making sure that America never again finds itself without a means of getting into space.

"I'm overjoyed," Puddy said. "I think

the agency is back on its feet. We've started walking and need to learn to jog and he's an excellent individual to help us learn to do that. I can't think of anyone with a better grasp of the technical aspects of agency programs. He has the ability to rapidly gain the respect of anyone he interfaces with. There's no one inside or outside the agency who can do a better job."

Engineering Director Henry Pohl said he, too, is pleased with the selection. He said he has known Truly since he came to JSC and has worked closely with him for the past three years.

"He certainly understands and knows the workings of the agency. He understands space—he's been there—and I think he has a good rapport with Congress. I look forward to working with him."

Bill Huffstetter, manager of JSC's

New Initiatives Office, said Truly has been involved in the agency's future-oriented exploration activities, particularly in the area of advanced transportation systems.

"I've found him, in working the advanced transportation activities associated with STS, to be very supportive and very visionary," Huffstetter said. "I expect him to be the same way in overall agency goals."

Huffstetter said he anticipates Truly will strongly support both Space Station *Freedom* and other future programs, but that he won't give that support blindly.

"He's a guy that listens very closely and really gets to the bottom of things when he's making his decisions," Huffstetter said. "He's going to make us toe the line and get some good information to him before he makes any decision on where we go exploration-wise."

Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

Editor Kelly Humphries
Associate Editor Linda Copley